भारतीय मानक
Indian Standard

IS 10901 : 2022

प्रोटीन आधिक्य (पौष्टिक) आटा — विशिष्टि

(पहला पुनरीक्षण)

Protein-Rich (*Paushtik*) *Atta* — Specification

(First Revision)

ICS 67.060

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Foodgrains, Allied Products and Other Agricultural Produce Sectional Committee had been approved by the Food and Agriculture Division Council.

Atta is prepared in India by grinding whole wheat either in small stone mills or in larger mills using mechanical power or in large roller flour mills. In an effort at nutritional upgrading, protein sources such as groundnut flour or soya flour are added to *atta* singly or in combination and the product is being marketed as protein-rich (*paushtik*) *atta*. This standard has been laid down to help in exercising proper quality control in the manufacture of protein-rich (*paushtik*) *atta* of good quality under hygienic conditions.

Separate Indian Standards have been published for *atta* (IS 1155), *maida* (IS 1009), fortified *atta* (IS 10898), fortified *maida* (IS 10899), fortified barley powder (IS 10900), protein-rich (*paushtik*) *maida* (IS 10902) and protein-rich (*paushtik*) barley powder (IS 10903).

This standard was originally published in 1984. This first revision has been undertaken to align the requirements of protein-rich (*paushtik*) *atta* with the specifications laid down in the *Food Safety and Standards* (*Food Products Standards and Food Additives*) *Regulations*, 2011.

Following changes have been incorporated in the current revision:

a) levels for requirements of moisture, acid insoluble ash, gluten content, and aflatoxin have been modified;

b) for enhancing the protein content of *atta*, only groundnut flour and soya flour have been permitted;

c) requirements for calcium, iron, thiamine, riboflavin and niacin have been deleted.

In the formulation of this standard, due consideration has been given to the provisions of the *Food Safety and Standards Act*, 2006 and the *Rules* and *Regulations* framed thereunder and the *Legal Metrology* (*Packaged Commodities*) *Rules*, 2011. However, this standard is subject to the restrictions imposed under these, wherever applicable.

The composition of the Committee responsible for formulation of the standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

PROTEIN-RICH (*PAUSHTIK*) *ATTA* — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for protein-rich (*paushtik*) *atta.*

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

IS No.	*Title*
1070 : 1992	Reagent grade water — Specification (*third revision*)
1155 : 2022	*Atta* — Specification (*third revision*)
2491 : 2013	Food hygiene — General principles — Code of practice (*third revision*)
3984 : 2002	Textiles — DW-Flour bags — Specification (*first revision*)
4875 : 1975	Specification for edible groundnut flour (solvent extracted) (*first revision*)
7219 : 1973	Method for determination of protein in foods and feeds
7835 : 2013	Edible medium-fat soya flour — Specification (*first revision*)
7836 : 2013	Edible low-fat soya flour — Specification (*first revision*)
12100 : 1987	Specification for high density polyethylene (HDPE) woven sacks for packing flour
14818 : 2017/ ISO 24333 : 2009	Cereal and cereal products — Sampling (*first revision*)
16287 : 2015/ ISO 16050 : 2003	Foodstuffs — Determination of aflatoxin B_1, and the total content of aflatoxins B_1, B_2, G_1 and G_2 in cereals, nuts and derived products — High-performance liquid chromatographic method

3 REQUIREMENTS

3.1 Description

Protein-rich (*paushtik*) *atta* means the product obtained by thoroughly and uniformly blending *atta* with suitable proportions of protein source such as solvent extracted groundnut flour or soya flour or combination of these up to an extent of 10.0 percent. The product shall be safe and fit for human consumption and shall be free from odour and rancidity taste and from insect or fungus infestation. It shall be free from fermented, musty or other objectionable odour. It shall be free from rodent hair and excreta. It shall neither contain added flavor and colouring agents and ingredients other than those specified nor any extraneous matter.

NOTE — The appearance, taste and odour shall be determined by organoleptic tests.

3.2 The edible protein flour(s) used for such blending shall conform to the following specifications:

a) Groundnut flour — IS 4875
b) Soya flour — IS 7836

3.3 The product shall also comply with the requirements given in Table 1.

3.4 Food Additives

The product shall not contain any food additives.

3.5 Contaminants, Toxins and Residues

The pesticide residues and heavy metals in the product shall not exceed the limits as prescribed in the *Food Safety and Standards* (*Contaminants, Toxins and Residues*) *Regulations*, 2011.

Table 1 Requirements for Protein-rich *(Paushtik) Atta*

(*Clause* 3.3)

Sl No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Moisture, percent by mass, *Max*	13.5	Annex A of IS 1155
ii)	Total ash (on dry basis), percent by mass, *Max*	2.75	Annex B of IS 1155
iii)	Acid insoluble ash (on dry basis), percent by mass, *Max*	0.10	Annex C of IS 1155
iv)	Gluten (on dry basis), percent by mass, *Min*	6.5	Annex D of IS 1155
v)	Total protein (N × 6.25) (on dry basis), percent by mass, *Min*	12.5	IS 7219
vi)	Crude fibre (on dry basis), percent by mass, *Max*	2.5	Annex E of IS 1155
vii)	Alcoholic acidity (as H_2SO_4) in 90 percent alcohol, percent by mass, *Max*	0.12	Annex F of IS 1155
viii)	Aflatoxin, µg/kg, *Max*	15	IS 16287
ix)	Urease activity (change in *p*H unit), *Max*	0.5	Annex B of IS 7835

NOTE — Urease activity test is applicable when soya flour is added.

4 HYGIENE

The product shall be manufactured, packed and stored under hygienic conditions in licensed premises (*see* IS 2491).

5 PACKING AND MARKING

5.1 Packing

5.1.1 The product shall be packed in quantities as stipulated under the *Legal Metrology* (*Packaged Commodities*) *Rules*, 2011 as well as in accordance with requirements under the *Food Safety and Standards Act*, 2006 and the *Rules* and *Regulations* framed thereunder.

5.1.2 The product may be packed in DW-flour bags (*see* IS 3984) or HDPE woven sacks (*see* IS 12100).

5.2 Marking

5.2.1 The ink used for marking shall be of such quality which may not contaminate the product. Information for non-retail containers shall be given either on the container or in accompanying documents. No claims shall be made on the label. Each bag shall be suitably marked as to give the following information:

a) Name of the product 'Protein-rich *(paushtik) atta'*;
b) Month and year of manufacture;
c) Name and address of the manufacturer;
d) Batch or Code number;
e) Net quantity;
f) Best before……..month…….year; and
g) Any other information required under the *Legal Metrology* (*Packaged Commodities*) *Rules*, 2011 and the *Food Safety and Standards* (*Labelling and Display*) *Regulations*, 2020.

5.2.2 *BIS Certification Marking*

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

6 SAMPLING

Representative samples of the product for ascertaining conformity to the requirements of this standard shall be drawn according to the method given in IS 14818.

7 TESTS

7.1 All the tests shall be carried out as specified in *col* 4 of Table 1.

7.2 Quality of Reagents

Unless specified otherwise, pure chemicals shall be employed in tests and distilled water (*see* IS 1070) shall be used where the use of water as reagent is intended.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the test results.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Foodgrains, Allied Products and Other Agricultural Produce Sectional Committee, FAD 16

Organization	*Representative(s)*
Directorate of Marketing and Inspection, Ministry of Agriculture, New Delhi	Shri P. K. Swain (***Chairman***) Additional Secretary (Agriculture Marketing),
All India Food Processors' Association, New Delhi	Shri Krishna Kumar Joshi Shrimati Kamia Juneja (*Alternate*)
Central Food Technological Research Institute (CFTRI), Mysore	Dr M. S. Meera Dr V. B. Sashikala (*Alternate*)
Centre of Excellence for Soybean Processing, CIAE, Bhopal	Dr Punit Chandra Dr S. K. Giri (*Alternate*)
Central Institute of Post-Harvest Engineering and Technology (CIPHET), Ludhiana	Head (Division of Transfer of Technology) Dr D. N. Yadav (*Alternate*)
Central Tuber Crop Research Institute (CTCRI), Thiruvananthapuram	Director Dr M. S. Sanjeev (*Alternate*)
Central Warehousing Corporation (CWC), New Delhi	Shri A. K. Malhotra Shri Sidharth Rath (*Alternate*)
CONCERT, Chennai	Shri R. Santhanam, IAS (Retd) Shri G. Santhanarajan (*Alternate*)
Confederation of Indian Food Trade and Industry (CIFTI)-FICCI, New Delhi	Ms Parna Dasgupta Ms Priyanka Sharma (*Alternate*)
Confederation of Indian Industries (CII), New Delhi	Shri Manish Whorra Shri Aromal Jkoshi (*Alternate*)
Consumer Education and Research Centre, Ahmedabad	Shrimati Dolly A. Jani Dr Anindita Mehta (*Alternate*)
Consumer Guidance Society of India, Mumbai	Dr Sitaram Dixit Dr M. S. Kamath (*Alternate*)
Consumer Research, Education, Action, Training and Empowerment (CREATE)	Shri K. Suresh Kanna Shri R. Ponnamalam (*Alternate*)
Defence Food Research Laboratory (DFRL), Mysore	Dr Pal Murugan.m Ms Sakshi Sharma (*Alternate*)
Directorate General of Supplies and Transport, Delhi	Co S. C. Joshi Maj Sonali Dudhane (*Alternate*)
Directorate of Marketing & Inspection, Faridabad	Dy Agricultural Marketing Advisor Smo (Std) (*Alternate*)
Directorate of Plant Protection Quarantine and Storage, Faridabad	Plant Protection Adviser Shri R. V. Singh (*Alternate*)
Food Corporation of India (FCI), New Delhi	Shri A. S. Arunachalam Shri Sachin (*Alternate*)
Food Safety and Standards Authority of India, New Delhi	Ms Aprajita Verma
G B Pant University, Food Science Division, Pant Nagar	Dr Satish K. Sharma Dr Sweta Rai (*Alternate*)
In personal capacity	Dr S. C. Khurana

Organization	*Representative(s)*
In personal capacity	Shri I. C. Chaddha
Indian Grain Storage Management and Research Institute, Hapur	Director
Indian Institute of Food Processing Technology (IIFPT), Thanjavur	Dr C. Anandharamakrishnan
Indian Institute of Maize Research (IIMR), Ludhiana	Dr R. Sai Kumar Dr Dharam Paul Chaudhary (*Alternate*)
Indian Institute of Packaging (IIP), Delhi	Shri Madhab Chakraborty Dr Nilay Pramanik (*Alternate*)
Ministry of Consumer Affairs, Food and Public Distribution, New Delhi	Dr Subhash Gupta Dr S. C Bansal (*Alternate*)
National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Sonipat	Dr Ankur Ojha
National Institute of Nutrition (NIN), Hyderabad	Dr Naveen Kumar R.
National Rice Research Institute, Cuttack	Dr Awadhesh Kumar Dr (Shrimati) Padmini Swain (*Alternate*)
National Sugar Institute (NSI), Kanpur	Dr V. P. Srivastava
Protein Foods and Nutrition Development Association of India (PFNDAI)	Dr Shatadru Sengupta Dr Jasvir Singh (*Alternate*)
Roller Flour Millers Federation of India (RFMFI), New Delhi	Shri D. V. Malhan
Vasantdada Sugar Institute (VSI), Pune	Dr Rajeev V. Dani Dr Sanjeev V. Patil (*Alternate*)
Warehousing Development and Regulatory Authority (WDRA), New Delhi	Dr Radhey Krishna Tripathi
BIS Directorate General	Shrimati Suneeti Toteja, Scientist 'E' and Head (FAD) [Representing Director General (*Ex-officio*)]

Member Secretary

Ms. Lavika Singh
Scientist 'B' (FAD), BIS

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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